Sheet 1-2, Sheets.

I. Brown.

Smut Mill

No. 3,207. Patented Aug. 4, 1843.

Fig. 2.

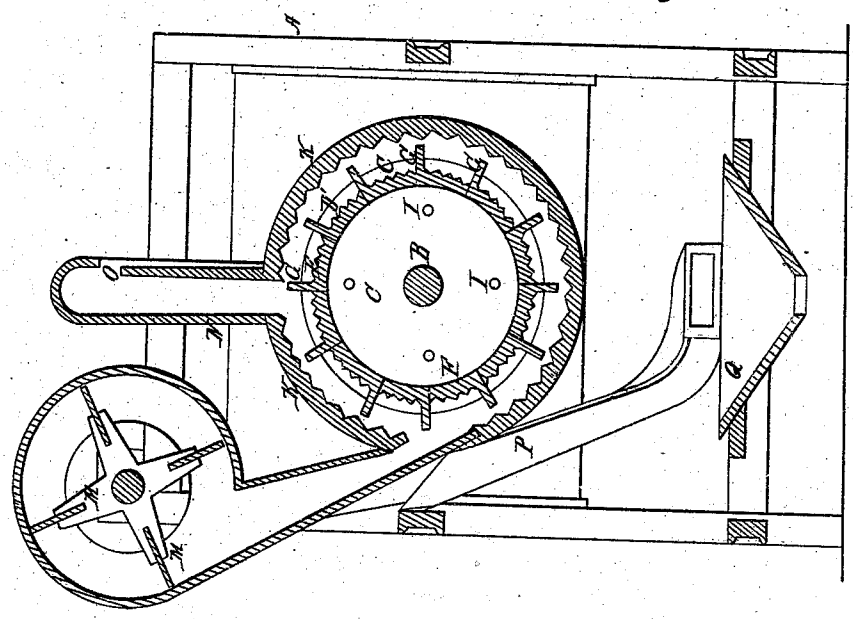
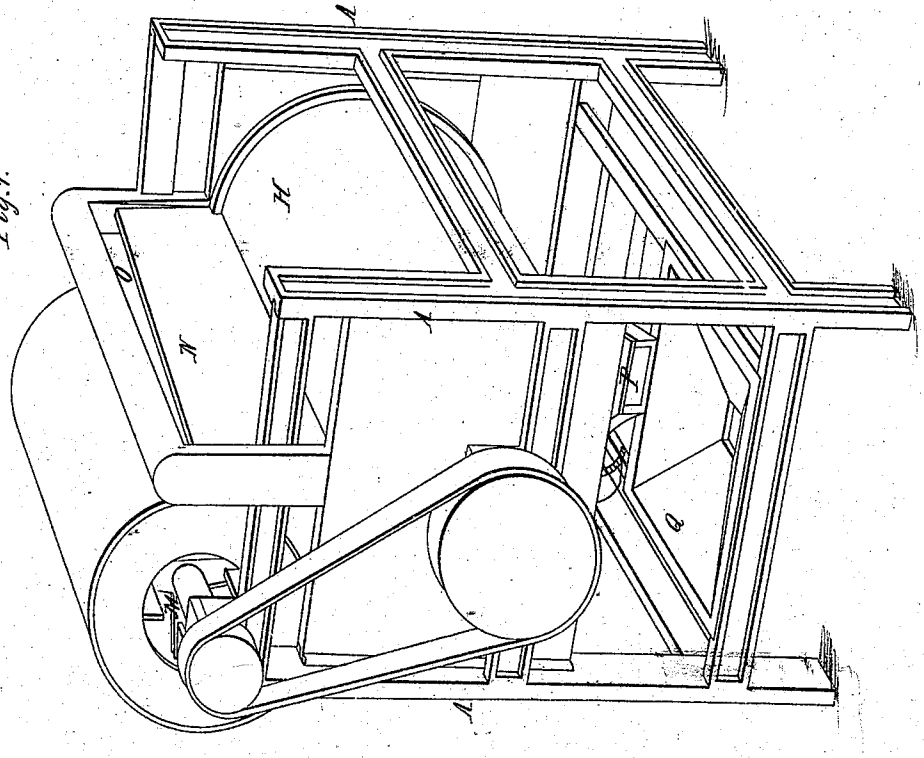


Fig. 1.



Sheet 2-2, Sheets.

I. Brown.

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Fig. 4.

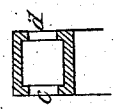
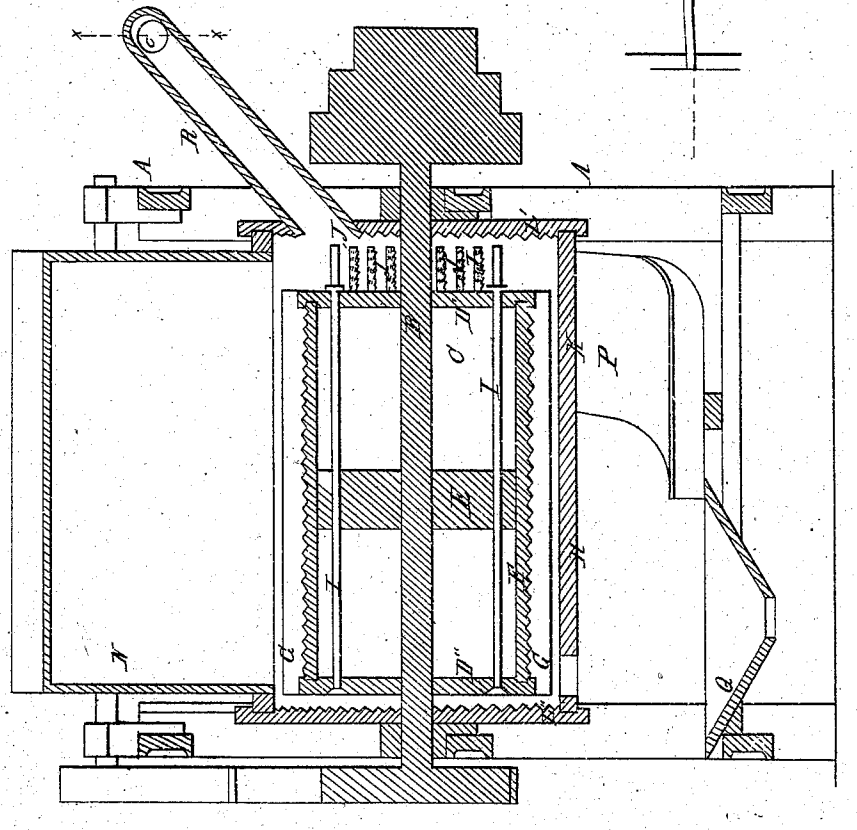


Fig. 5.

Fig. 3.



UNITED STATES PATENT OFFICE.

THOMAS BROWN, OF ROME, NEW YORK.

SMUT-MACHINE.

Specification of Letters Patent No. 3,207, dated August 4, 1843.

To all whom it may concern:

Be it known that I, THOMAS BROWN, of Rome, in the county of Oneida and State of New York, have invented a new and useful Improvement in Machines for Cleaning Grain, called "Brown's Improved Smut-Machine," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical longitudinal section. Fig. 3 is a vertical transverse section. Fig. 4 is a section through the spout R at the line *x*—*x* of Fig. 3. Fig. 5 is a section of one of the obliquely set bars, or beaters G—the dotted line being the line of the shaft B.

This machine is made entirely of metal except the bands and some minor parts. It may, however, be made of any suitable material. The frame A is rectangular of cast iron and of suitable size and strength for the purpose intended. About the center of the frame is arranged a revolving horizontal shaft B turning in boxes resting on the end cross girts of the cast frame—said shaft projecting beyond the sides of the frame to receive the driving pulleys which are of various diameters to produce various degrees of velocity to the beaters on said shaft as hereafter described.

The beater cylinder C is made in the following manner: Two circular heads D′ D² of the required diameter and thickness with circular grooves on the inner faces, are cast and put on the shaft B and secured by a key or keys or other suitable means. A circular block E of less diameter than the heads is put on said shaft between the heads. Around the circumference of this circular block are arranged a series of segmental plates F whose convex surfaces are cast with pyramidal shaped projections or with protuberances of any suitable form for the purpose of rubbing the grain and with straight bars or beaters G one on the edge of each segment, at right angles or nearly so and of suitable width and thickness for beating or throwing the grain against the bars of the concave H in which the cylinder turns, as hereafter described, arranged or set obliquely with the axis as shown at G Fig. 5 of the beater cylinder for the purpose of conveying the grain from the feeding to the discharging end of the case and producing what is termed draft. These segmental plates F are inserted at their ends into the aforesaid circular grooves in the circular plates D′ D″ and are held securely therein by means of rods, screws, and nuts I and which rods are also projected beyond the head of the cylinder to form beaters of another description to be described. They are also screwed to the middle circular block by common screws. A number of short horizontal parallel wrought iron bearded or roughened bars J are inserted into the head of the cylinder next the feeding end and are secured therein by screws cut on them and screwed into female screws in said head; they may however be secured in various ways either by clenching, riveting, or otherwise. These roughened bars J are designed to act upon the grain as soon as it enters the machine for the purpose of breaking the white caps, smut balls and for separating the furze from the ends of the wheat before it passes to the obliquely set beaters and pyramidal projections before described. The ends of the cylinder may also be made rough by casting protuberances on them; or in any convenient way.

The case H in which the aforesaid beater cylinder revolves is made cylindrical of the required diameter and is perforated for the discharge of the smut grain, &c.; it is composed of a series of segment flanged cast iron plates K ribbed in parallel lines on the concave surface thereof and held together in a cylindrical form by end plates L′ L″ and screw bolts, the screw bolts passing through the plates and flanges. The said end plates L′ L″ are likewise cast on the inside with pyramidal or other shaped projections and are perforated for the admission of the grain and for the axle to turn in. These end plates are secured in the frame by being let into grooves on the inside of the corner posts of the cast iron frame. The segment plates may be secured by dropping into circular grooves in the end plates held by horizontal parallel iron screw rods. The end plates are divided horizontally at the middle for the purpose of lifting the top portion or segment of the case from the under portion for the convenience of having ready access to the interior and for removing the cylinder when required.

A fan M for compressing air within the machine and producing an upward current for partially clearing the grain as it enters the machine and a current through a ver-

tical rectangular trunk N having a triangular issue O for the escape of the white caps, smut and all other impurities from the grain. And a downward current through a spout P below the case for directing the current in a line at right angles to the descent of the grain as it passes into the receiving hopper Q below the case, which last mentioned current separates whatever impurities may pass with the grain from the case.

The spout R for conducting the grain to the interior of the case is made of wood, or any suitable material set in an inclined position at an angle of about 45 degs., or any suitable angle, and inserted into the opening in the end plate L′ of the case. The upper end of the spout is closed with a cap. The entrance for the grain is in the side of the spout at *c*. Another opening *d* is made in the spout to let off the chaff, white caps, &c., that may be in the grain by the current through the said spout.

The vertical trunk N for the escape of the smut, white caps, &c., is placed over a rectangular opening of corresponding shape in the top of the case H.

What I claim as my invention and which I desire to secure by Letters Patent is—

Constructing the revolving cylinder C with bearded or roughened beaters J projected from the end of the cylinder in the manner and for the purpose set forth; and also the arrangement of the spouts P R and trunk N in combination with the aforesaid case H and cylinder C.

THOMAS BROWN.

Witnesses:
WM. P. ELLIOT,
A. E. JOHNSON.